

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

A CONTRIBUTION TO THE ICHTHYOLOGY OF
BERMUDA.

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The American Museum of Natural History has recently received a collection of Bermuda fishes taken personally by Mr. Louis L. Mowbray over a period of several years. Mr. Mowbray is so thoroughly familiar with the piscifauna of that locality that he is especially well qualified to judge what material from there will prove of interest; and it follows that this collection supplements, to a considerable extent, what is known of Bermuda fishes. It contains seven species which appear to be undescribed, as follows:

FAMILY MURAENIDAE.

Gymnothorax brunneus, sp. nov.

Close to *Gymnothorax (Lycodontis) funebris*, but with different dentition, less deep, dorsal origin further back, eye apparently smaller in specimens of same length. The type, our only specimen, No. 7309, American Museum of Natural History, was collected at Bermuda by Mr. Louis L. Mowbray. It is 344 mm. in total length. Head 2.8 in trunk, tail 0.7, depth 6.9. Gape 2.1 in head, snout 5.5. Eye 1.8 in snout, equal to interorbital.

Jaws curved, not quite closing. Long, depressible, simple canines in jaws, and two or three (the longest) in a single row on vomer. An outer row of smaller sharp, more or less unequal, retrorse teeth in jaws. Dorsal beginning over front of gill opening. Fins rather low.

Color uniform dark chestnut brown, including fins which are unmarked. Back and dorsal especially, of this specimen, thickly dotted with small pale encrustations.

FAMILY SERRANIDAE.

Anthias tenuis, sp. nov.

More slender with a greater number of scales than *Anthias louisi* T. H. Bean, also described from Bermuda. The type, No. 7310, American Museum of Natural History, was collected at Bermuda, by Mr. Louis L. Mowbray, on December 17. It is 68 mm. long to base of caudal. Head 3.6 in this length, depth 3.4. Snout 4.7 in head, eye 3.3, maxillary 2.0, interorbital 3.6, longest dorsal spine, 2.2, dorsal ray 2.7, anal spine 3.5, anal ray 2.8, pectoral 1.2, ventral 1.3, caudal 1.9, depth of peduncle 2.2.

Lower jaw projecting, maxillary to beyond center of eye, interorbital slightly convex. Center of upper jaw notched, its teeth small, in more than one row anteriorly. Those in the lower jaw in a single row, with canines, preopercle serrulate, two weak, flat spines at its angle, the upper the longer. Opercle with two weak, flat spines at its angle, the lower the longer. Snout naked, scales extending forward to above center of eye, maxillary scaled. Lateral line with a downward angle under the axil of the soft dorsal. Lateral line about 54. About 5 scales between lateral line and origin spinous dorsal, 3 between lateral line and middle of same. Dorsal spines weak and fragile. Caudal forked, the lobes bluntly rounded. Dorsal X, 15. Anal III, 9.

Color in spirits uniform pale brownish, likely rosy in life.

Besides the type there is a specimen 50 mm. to base of caudal from Bermuda.

FAMILY POMACENTRIDAE.

Chromis bermudae, sp. nov.

Allied to *C. enchrysurus*, from which it differs in technical details. The type, No. 7317, American Museum of Natural History, was collected at Bermuda by Mr. Louis L. Mowbray. It is 60 mm. long to base of caudal. Head 3.1 in this length, depth 2.5. Snout 4.0 in head, eye 2.7, maxillary 3.5, interorbital 3.0, pectoral 1.0, ventral 1.2 with filamentous tip, longest dorsal spine 2.0, dorsal ray 1.7, second anal spine 1.7, longest anal ray 1.7, caudal 1.2, caudal peduncle 2.0, its depth slightly greater than its length.

Interorbital broad, almost flat. Outer ventral rays exerted. Lobe of soft dorsal to or beyond caudal base. Caudal shallowly forked, the lobes blunt. Lateral line 27. Dorsal XIV, 11. Anal II, 11.

Color in spirits; purplish above, paler below; axil of pectoral black. Paired fins, peduncle and caudal yellowish.

Three other small specimens with the same data are in a poor state of preservation as though taken from the stomach of some larger fish.

FAMILY LABRIDAE.

Small wrasses are particularly numerous and variable about Bermuda and it is somewhat of a problem to classify them properly. To do so would probably entail a thorough revision of the group. The characters which separate the different species are slight and often variable. For

instance, in some cases color is the most tangible criterion; even though color changes of each form may be more striking than the color differences between them. It is not improbable that species already recognized will eventually be relegated to synonymy, but the following appear to be distinct from any so far described:

Iridio frenatus, sp. nov.

A black axillary spot, blotch below the center of side, and on spinous dorsal. Lips pale, a conspicuous pale streak from the corner of the mouth to the base of the pectoral. The type, our only specimen, No. 7313, American Museum of Natural History, was collected in Bermuda by Mr. Louis L. Mowbray. It is 89 mm. long to base of caudal. Head 3.4 in this length, depth 3.6. Snout 3.3 in head, eye 6.0, interorbital 4.8, pectorals and ventrals broken, longest dorsal spine 3.0, dorsal ray 2.6, anal spine 6.0, anal ray 3.3, caudal 1.7.

Head and body moderately compressed. Canines in front of jaws $\frac{2}{2}$, the upper short, lips very full. Lateral line 26. A rather broad naked strip cephalad from the dorsal. Caudal slightly rounded. Dorsal IX, 11. Anal III, 11.

Color in spirits, purplish grey, fading on the lower parts. Front of dorsal purplish grey, becoming pale posteriorly. A black blotch between the 5th and 8th spines, a pale stripe bordering this above, extends backward in the center of the fin, purplish grey against a paler ground. A black blotch below the center of the side and spot in the upper axil of the pectoral. Lips pale, and a conspicuous pale stripe from corner of mouth to base of pectoral.

Iridio similis, sp. nov.

With small scales before the dorsal as in *I. semicinctus* of the Pacific and the lateral band bolder and blacker than in many similar appearing species. The type, our only specimen, No. 7312, American Museum of Natural History, was collected in Bermuda by Mr. Louis L. Mowbray. It is 90 mm. long to base of caudal. Head 3.1 in this length, depth 3.6. Snout 3.0 in head, eye 5.0, interorbital 5.0, maxillary 4.6, pectoral 1.5, ventral 1.6, longest dorsal spine 3.2, dorsal ray the same, longest anal spine 3.8, anal ray 3.2, caudal 1.6.

Head and body compressed. Outer ventral rays exerted. Canines in front of jaws well developed $\frac{2}{2}$, the upper curved outward. Lateral line 26. About 8 rows of scales before the dorsal, the anterior reduced in size and some of them crossing the center of the back. Caudal subtruncate, its angles slightly rounded. Dorsal IX, 11. Anal II, 11.

Color in spirits pale, a broad, black band from snout onto center of caudal. A black spot in the axil of the pectoral. An elongate black blotch on the spinous dorsal and dusky lengthwise streak in the center of the dorsal behind same. Fins otherwise pale.

Bermudichthys, gen. nov.

Type, *Bermudichthys subfurcatus*, sp. nov.

A labrid fish close to *Thalassoma*. Dorsal spines 7, anal 2. Teeth irregularly larger at front of jaws, 1 or 2 in the front of the upper jaw only might be considered poorly developed canines. Head without scales, little compressed, caudal moderately forked, the lobes not produced. The weak teeth and few spines of our two specimens may be matters of individual abnormality, in which case this fish should stand as a sub-genus under *Thalassoma*. Bermuda is a center of abundance and diversity for the wrasses, and it is appropriate that one of them should bear its name.

Bermudichthys subfurcatus, sp. nov.

The distinctly forked caudal without exerted lobes separates this species from numerous small wrasses with which it is associated. The type, No. 7314, American Museum of Natural History, was collected at Bermuda by Mr. Louis L. Mowbray. It is 86 mm. long to base of caudal. Head 3.0 in this length, depth 4.0. Width of head 2.5 in its length, snout 3.4, eye 5.0, interorbital 3.7, maxillary 4.6, pectoral 1.4, ventral 2.6, longest dorsal spine 3.3, dorsal ray 2.6, longest anal spine 3.2, anal ray 2.6. Caudal 1.5.

Head little compressed, without scales. Ventrals short and blunt. Teeth in front of jaws increased in size, scarcely canines. Lateral line complete, 27. Caudal evenly forked for about $\frac{1}{3}$ its length; upper lobe slightly the longer. Dorsal VII, 13. Anal II, 11.

Color in spirits, dark above including dorsal, blotched on the sides, pale below. Pectoral pale, darkened terminally, ventral and anal more or less dark. Caudal mostly dark, the center of the lower lobe pale.

A co-type with the same data 62 mm. to base of caudal, has the entire center of caudal pale, the fork about $\frac{1}{4}$ its length.

FAMILY ANTENNARIIDAE.

Histrio jagua, sp. nov.

Resembles the common *Histrio (Pterophryne) histrio* but is very different in color, with pale markings on a dark ground. The type, our only specimen, No. 7316, American Museum of Natural History, was collected at Bermuda by Mr. Louis L. Mowbray. It is a large specimen, 110 mm. to base of caudal. Head 2.6 in this length, depth 2.0. First dorsal spine with bait 4 in head, 2nd dorsal spine 2.3, 3rd 1.4, longest dorsal ray 1.4, anal ray 1.4, pectoral from arin-pit 1.0, ventral 1.5, snout 4.5, eye 1.5 in snout.

The bait on first dorsal spine is entire, somewhat pointed, with papillae. Dorsal rays 12. Anal 7.

In spirits the dorsals are dark chocolate-brown with white bars and spots. Head, back and sides are uniform chocolate-brown with two rather regular whitish rings posteriorly, each surrounding a whitish central spot; also with other whitish markings. Anal and caudal are whitish

irregularly barred and reticulated with chocolate-brown. Lower surface from chin to vent paler than rest of body.

A very satisfactory revision of Bermuda fishes by T. H. Bean may be found in Field Columbian Museum, Zoölogical Series, Vol. 7, 1906, pp. 21-89, and Proc. Biol. Soc., Wash., Vol. 25, 1912, pp. 121-126. *Stolephorus viridis*, described p. 122 of the latter publication, is obviously from the description not an anchovy but a herring. A series of about 40 individuals so labeled in the present collection are identified as *Jenkinsia stolifera*, of which *viridis* may be considered as a synonym and which should replace it in the Bermuda list.

The following species are additions to this list: *Gymnothorax* (*Lycodontis*) *miliaris*, *Tylosurus notatus*, *Halocypselus evolans*, *Syngnathus louisiana*, *Prionodes tigrinus*, *Eleotris pisonis*, *Gobius translucens*.

Gobius translucens is a species recently described from Porto Rico. It is close to *G. glaucofraenum*, but apparently distinct. Earlier Bermuda records for *glaucofraenum* may refer to it. The identification of certain pipe-fishes is difficult and fraught with the possibility of error. In the case of *Syngnathus louisiana*, a large specimen which has been compared with a series from the coast of the United States in the American Museum of Natural History, there is no doubt. There are several specimens of *Syngnathus pelagicus* in the collection which can not be distinguished from material from floating weed in the east-central North Atlantic with which they have been compared.

